JOB OFFER

Position in the project:	Master or Bachelor Student
Scientific discipline:	biotechnology, microbiology, bioremediation
Job type (employment contract/stipend):	Stipend
Number of job offers:	1
Remuneration/stipend amount/month *("X0 000 PLN of full remuneration cost, i.e. expected net salary at X 000 PLN"):*	1500 PLN
Position starts on:	01.01.2023
Maximum period of contract/stipend agreement:	7 months
Institution:	University of Warsaw, Faculty of Biology / Warsaw
Project leader:	Prof. Wojciech Franus
Project title:	Fly ashes as the precursors of functionalized materials for applications in environmental engineering, civil engineering and agriculture Project is carried out within the TEAM-NET programme of the Foundation for Polish Science
Project description:	This TEAM-NET joint project assumes using fly ashes as a precursor for the synthesis of novel functionalized materials with the structure of not only zeolites, but also mesoporous silica materials and metal-organic frameworks (MOFs). Then produced materials will be tested for possible applications in agriculture, civil and environmental engineering. With the implementation of new technologies of coal combustion and flue gas treatment, new types of fly ashes with increased content of unburned carbon (up to 30%) have been produced. Such byproducts will be used in this project for the synthesis of novel zeolite-carbon composites. Previous work related to the use of this type of fly ashes was focused on the separate production of zeolites or activated carbons, which did not fully exploit the potential of the above-mentioned byproducts. Their use as a precursor to the synthesis of a zeolite-carbon-vermiculite composite in this project will also pave the way for developing a novel material to replace vermiculite raw materials in agricultural applications. With this announcement we are looking for a Master student for the work-package #5 entitled "Biopreparations for pollutant removal from water, soil and air". The aim of WP #5 is to develop a series of biopreparations (bacteria immobilized on carriers derived from functionalized materials) to enhance the process of bioremediation of contaminated waters, soils and gases. Selected bacterial strains (proposed by the group leader) need to be analyzed for the following abilities (i) degradation of pesticides and petroleum hydrocarbons, (ii) metabolism of nitric and sulfur oxides, (iii) degradation of volatile organic compounds, and (iv) denitrification of nitrates. Selected strains will then be thoroughly analyzed for their metabolic potential, ability to survive under extreme environmental conditions (e.g. the presence of heavy metals in high concentrations), ability to form biofilms and biological safety. In the next stage, conditions for effective immobilization of the selected strains on the functionalized materials and on

	natural carriers (e.g. zeolites) will be worked out. The planned R&D work should also include experimental verification of the biopreparations, both ex situ and in pilot bioreactors or directly in industrial tanks.
Key responsibilities include:	1. Involvement in establishing of unique ultrahigh throughput droplet microfluidic techniques for high throughput isolation and genomics characterization of environmental bacterial consortia. 2. Performing and phenotypic characterization of microorganisms capable of transforming inorganic and organic compounds
Profile of candidates/requirements:	1. Creativity and willingness to take part in cross-disciplinary research project 2. At least 6 months of experience in experimental research 3. Knowledge of basic microbiology and/or analytical chemistry methods 4. Good communication in English (written and spoken)
Required documents:	1. CV with list of publications and/or major achievements 2. Motivation letter 3. Confirmation about student status of 1st or 2nd degree studies
Please submit the following documents to:	ts.kaminski2@uw.edu.pl
Application deadline:	**19.12.2022**
For more details about the position please visit (website/webpage address):	*https://www.fnp.org.pl/oferta_pracy* *http://wbia.pollub.pl/pl/praca* *http://www.wggios.agh.edu.pl/pracownicy* *https://www.biol.uw.edu.pl/pl/index.php?option=com_content&view=category&layout=blog&id=148&Itemid=317*
Euraxess job/stipend offer (in case of PhD and postdoc positions):	*n.d.*
Appeal	*Possible appeals against the decision should be sent to prof. Wojciech Franus (project coordinator, w.franus@pollub.pl) no letter then 7 days after receiving the decision, i.e. the date of results announcement. In the protest an explicit justification have to be included.*